**Planning Community of Practice**
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# AFC Theme 2
# Transforming the Corps into a Risk Management Agency

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ACTIONS for CHANGE

# Our Decision Problems

- Complexity due to:
  - Nature of the systems we manage
  - Number and diversity of interested and affected parties
- Risk-informed decision making includes approaches for:
  - Resolving risk-decision problems
  - Analyzing relevant uncertainties
  - Life-cycle risk management - Informing policymaking, planning, design, operations

# Transforming the USACE into a Risk Management Organization

- White Paper Recommendations
  - Standardize the Corps risk language
  - Adopt the risk analysis framework
  - Develop a risk management model
  - Centralized technical analysis structure
  - Commission papers and develop tools for implementing risk analysis across missions
  - Learn from ongoing risk analysis

# Risk

Likelihood and intensity of potentially adverse outcomes

# Uncertainty, Uncertainty, Uncertainty…

*Uncertainty:* Lack of certainty

- An important distinction:
  - Making a prediction and
  - Attaching a measure of confidence to that prediction
- Two practical sources of uncertainty
  - Incomplete characterization of the system components
  - Changes in conditions over time that affect the performance of the system

# Risk Analysis

# *Risk*-Informed

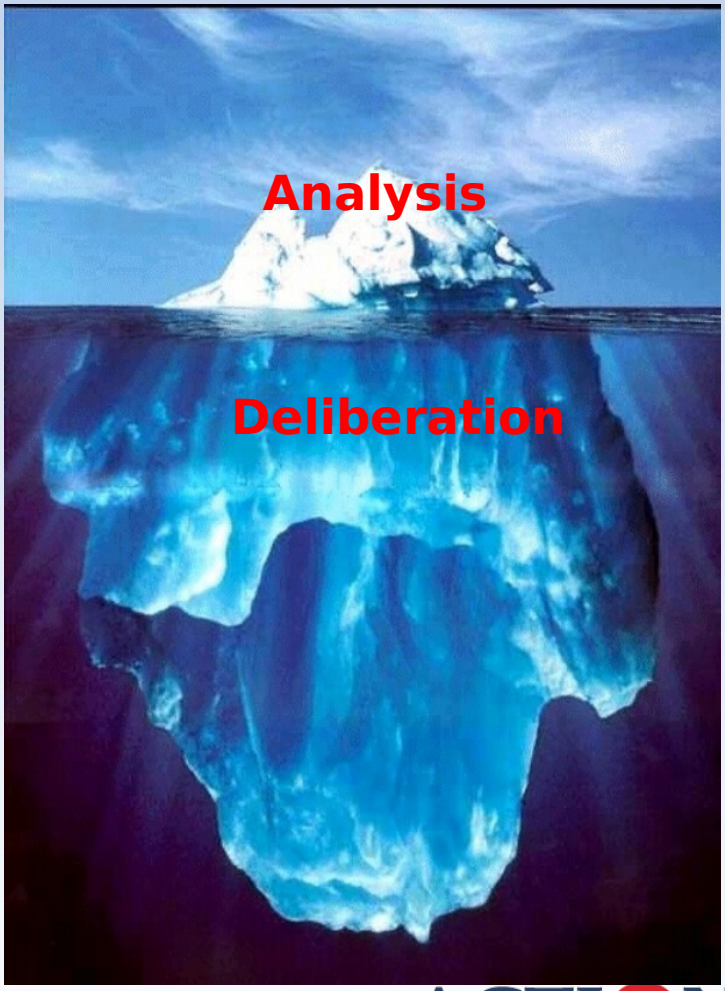
- *Risk analysis*: an approach to developing an understanding of the processes shaping the scope and nature of risks and uncertainties that is sufficient to support decision making
  - What is the risk?
  - Why and how are the risks occurring?
  - What is the uncertainty associated with the risk estimate?
  - How do the management alternatives differ in terms of risk reduction performance?
  - How do we communicate the risks and our strategies for managing those risks?

# Risk Assessment Tools

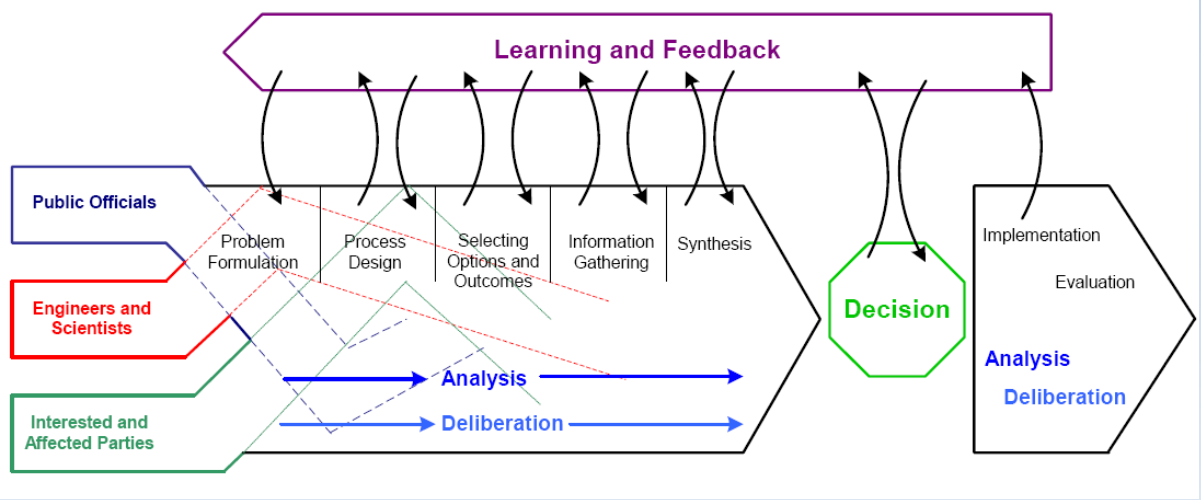
- Range from the qualitative to the quantitative
- Models to describe and forecast the distribution of events
  - Weather models, hydrodynamics and hydrology, contaminant F&T, water quality models, etc.
- Data analysis and models to describe the range of consequences
  - Human health and safety, economics, ecology, etc.
- Approaches for evaluating uncertainties
  - Scenario analysis
  - Quantitative, probabilistic methods

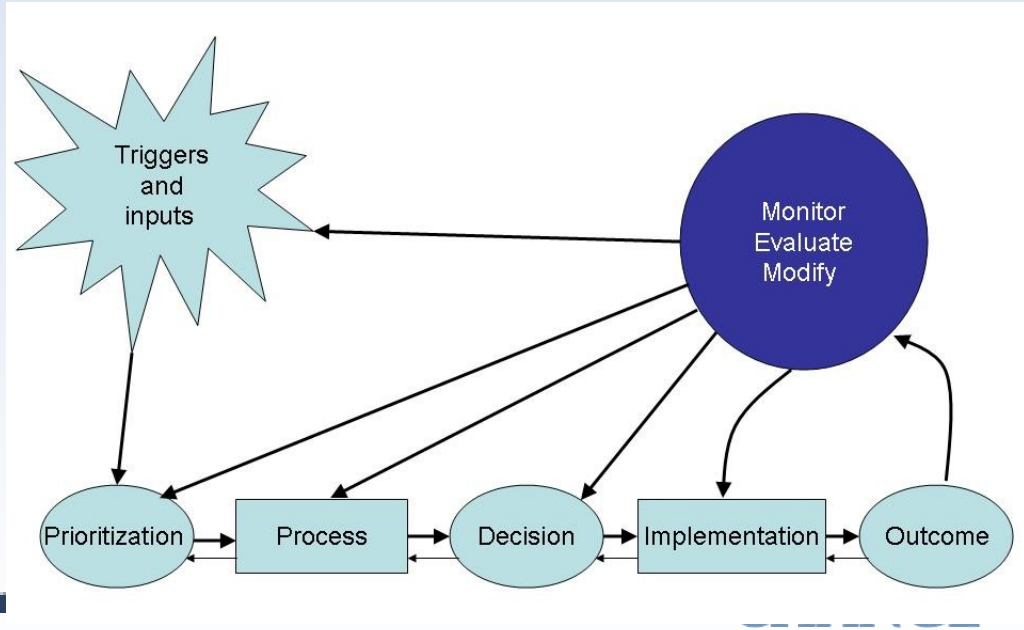
# An Analytic-Deliberative Process

- Risk analysis produces, uses and disseminates technical information
- Deliberation is used to develop understanding to support decisions
  - Deliberation will determine:
    - How the problem is conceptualized
    - How the problem is analyzed
    - What constitutes a successful solution



# Risk Management Process



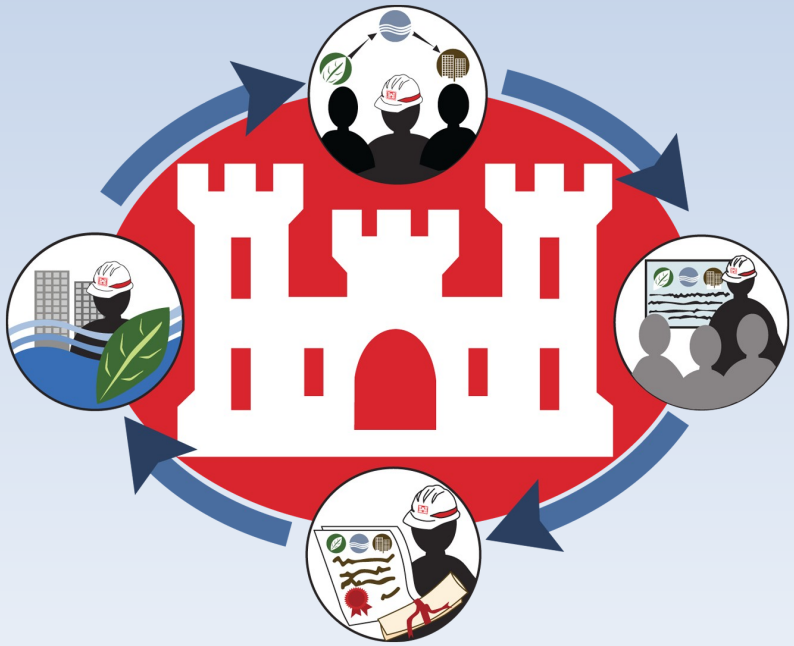
# The Path Forward

- 3 principles relevant to transforming practice
  - RIDM is based upon a comprehensive analysis of events (hazards and exposure) and consequences that includes consideration of significant uncertainties
  - Deliberation is essential to the successful resolution of risk-decision problems
  - Transforming practice requires commitment to change, experimentation, and learning

# Adaptive Management

- Uncertainty is inherent to planning, design, construction, and O&M
- Adaptive management requires a framework for collecting and using information that results from:
  - Implementing a plan
  - Monitoring the performance of the plan
  - Learning
- The RIDM Framework provides a suitable approach

# Questions?



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